

Table 1

NovaAir Strato Series - Area Coverage *

8 Foot Ceiling	10 Foot Ceiling	12 Foot Ceiling	Hourly Air Changes
1,380 Sq. Ft.	1,104	920	2
920	736	613	3
690	552	460	4
552	442	368	5
460	368	307	6
394	315	263	7

* Fan performance calculations include unit air resistance losses resulting in a 368 cubic feet per minute effective air volume at maximum speed with 120 volt 60 Hz electrical power.

Table 2

NovaAir Strato Series One Pathogen Inactivation Percentage¹

Pathogen	Percent Inactivation ²
<i>Serratia marcescens</i>	87.8716 - 99.9806
<i>Escherichia coli</i>	56.5885 - 99.9984
<i>Staphylococcus aureus</i>	92.5966 - 99.9963
<i>Streptococcus pyogenes</i>	100
<i>Pseudomonas aeruginosa</i>	70.8029 - 100
<i>Legionella pneumophila</i>	99.7557 - 99.936
Adenovirus	79.896
Vaccinia (Poxvirus)	98.8774
Coxsackie virus	96.1439
Influenza A virus	96.9427
Echovirus	99.9865
Reovirus Type 1	99.5629
<i>Mycobacterium tuberculosis</i>	86.8703 - 99.8097
<i>Corynebacterium diptheriae</i>	86.558
<i>Moraxella-Acinetobacter</i>	0.585915
<i>Haemophilus influenzae</i>	85.4482
<i>Bacillus anthracis</i> (mixed)	77.5872
<i>Bacillus anthracis</i> spores	90.2988
<i>Bacillus subtilis</i> spores	61.4022
<i>Penicillium expansum</i> spores	40.5515
<i>Mucor racemosus</i> spores	32.7435
<i>Penicillium italicum</i> spores	30.9412
<i>Fusarium oxysporum</i> spores	28.0413
<i>Cryptococcus neoformans</i> spores	25.8956
<i>Penicillium digitatum</i> spores	19.0671
<i>Aspergillus niger</i> spores	18.8528
<i>Fusarium solani</i> spores	18.829
<i>Aspergillus glaucus</i> spores	14.1687
<i>Cladosporium</i> spores	10.5644
<i>Scopulariopsis</i> spores	8.16783
<i>Rhizopus nigicans</i> spores	5.9837
Blue-green algae	1.34248

1 - Results from device modeling performed by Ultra Violet Devices, Inc., March 2001.

2 - When range of percentages shown, higher value for airborne pathogen inactivation.
Where single percentage shown, pathogen inactivation percentage based on petre dish inactivation data.

Table 3

NovaAir Strato Series Two Pathogen Inactivation Percentage-¹

Pathogen	Percent Inactivation - ²
<i>Serratia marcescens</i>	90.0844 - 99.9914
<i>Escherichia coli</i>	59.9133 - 99.9994
<i>Staphylococcus aureus</i>	94.226 - 99.9986
<i>Streptococcus pyogenes</i>	100
<i>Pseudomonas aeruginosa</i>	74.0411 - 100
<i>Legionella pneumophila</i>	99.8624 - 99.9683
Adenovirus	82.7514
Vaccinia (Poxvirus)	99.2688
Coxsackie virus	97.1742
Influenza A virus	97.8087
Echovirus	99.9942
Reovirus Type 1	99.7398
<i>Mycobacterium tuberculosis</i>	89.1841 - 99.8954
<i>Corynebacterium diptheriae</i>	88.902
<i>Moraxella-Acinetobacter</i>	0.641682
<i>Haemophilus influenzae</i>	87.8944
<i>Bacillus anthracis</i> (mixed)	80.5698
<i>Bacillus anthracis</i> spores	92.2361
<i>Bacillus subtilis</i> spores	64.756
<i>Penicillium expansum</i> spores	43.4316
<i>Mucor racemosus</i> spores	35.2432
<i>Penicillium italicum</i> spores	33.3398
<i>Fusarium oxysporum</i> spores	30.2672
<i>Cryptococcus neoformans</i> spores	27.9862
<i>Penicillium digitatum</i> spores	20.6856
<i>Aspergillus niger</i> spores	20.4555
<i>Fusarium solani</i> spores	20.4299
<i>Aspergillus glaucus</i> spores	15.4118
<i>Cladosporium</i> spores	11.5128
<i>Scopulariopsis</i> spores	8.91197
<i>Rhizopus nigricans</i> spores	6.53599
Blue-green algae	1.46972

1 - Results from device modeling performed by Ultra Violet Devices, Inc., March 2001.

2 - When range of percentages shown, higher value for airborne pathogen inactivation.
Where single percentage shown, pathogen inactivation percentage based on petre dish inactivation data.

Table 4

Energy Requirement for Microbial Inactivation with Ultraviolet Light

Energy (Microwatt-Seconds/Square Centimeter)		
Bacteria	90%	99.99%
<i>Bacillus anthracis</i> *	4,520	8,700
<i>Salmonella enteritidis</i> *	4,000	7,600
<i>Bacillus Megatherium</i> sp. (veg.) *	1,300	2,500
<i>Bacillus Megatherium</i> sp. (spores) *	2,730	5,200
<i>Bacillus paratyphosus</i> *	3,200	6,100
<i>Bacillus subtilis</i> *	5,800	11,000
<i>Bacillus subtilis</i> spores *	11,600	22,000
<i>Corynebacterium diphtheria</i> *	3,370	6,500
<i>Eberthelia typosa</i> *	2,140	4,100
<i>Escherichia coli</i> *	3,000	6,600
<i>Micrococcus candidus</i> *	6,050	12,300
<i>Micrococcus sphaeroides</i> *	10,000	15,400
<i>Neisseria catarrhalis</i> *	4,400	8,500
<i>Photomonas tumeficiens</i> *	4,400	8,500
<i>Proteus vulgaris</i> *	3,000	6,600
<i>Pseudomonas aeruginosa</i> *	5,500	10,500
<i>Pseudomonas fluorescens</i> *	3,500	6,600
<i>Salmonella typhimurium</i> *	8,000	15,200
<i>Sarcina lutea</i> *	19,700	26,400
<i>Serratia marcescens</i> *	2,420	6,160
Dysentery bacilli *	2,200	4,200
<i>Shigella paradysenteriae</i> *	1,680	3,400
<i>Spirillum rubrum</i> *	4,400	6,160
<i>Staphylococcus albus</i> *	1,840	5,720
<i>Staphylococcus aureus</i> *	2,600	6,600
<i>Streptococcus hemolyticus</i> *	2,160	5,500
<i>Streptococcus lactis</i> *	6,150	8,800
<i>Streptococcus viridans</i> *	2,000	3,800
Yeast		
<i>Saccharomyces ellipsoides</i> *	6,000	13,200
<i>Saccharomyces</i> sp. *	8,000	17,600
<i>Saccharomyces cerevisiae</i> *	6,000	13,200
Brewers yeast *	3,300	6,600
Bakers yeast *	3,900	8,800
Mold Spores	Color	
<i>Penicillium roqueforti</i> *	Green	13,000
<i>Penicillium expansum</i> *	Olive	13,000
<i>Penicillium digitatum</i> *	Olive	44,000
<i>Aspergillus glaucus</i> *	Bluish green	44,000
<i>Aspergillus flavus</i> *	Yellowish green	60,000
<i>Aspergillus niger</i> *	Black	132,000
<i>Rhizopus nigricans</i> *	Black	111,000
<i>Mucor racemosus</i> A *	White gray	17,000
<i>Mucor racemosus</i> B *	White gray	17,000
<i>Oospora lactis</i> *	White	5,000
Virus		
Adeno Virus Type III **		4,500
Coxsackie A2 **		6,300
Infectious Hepatitis **		8,000
Influenza **		3,400
Rotavirus **		24,000
Poliovirus **		21,000

* - Data acquired from Table II, Incident Energies at 2537 Å Radiation Necessary to Inhibit Colony Formation in 90% of the Organisms and for Complete Destruction, Application and Measurement of Ultraviolet Radiation by Rudolph Nagy of Westinghouse Electric Corporation and printed in the American Industrial Hygiene Association Journal, Volume 25, Pages 276, May-June 1964.

** - Data acquired from Dosage of UV-C in Microwatt sec/ square centimeter necessary for complete destruction, NQ Environmental, Inc., 1997.

Table 5

**NovaAir Strato Series - Suggested Applications for Various Ranges of
Hourly Air Changes**

**Ranges of Hourly
Air Changes**

Suggested Applications

2 to 2.5	Utility and storage rooms and areas that are lightly traveled.
2 to 4	Offices; government and other office complexes; businesses; schools; restaurants; hotels; and prisons detention areas.
3 to 7.5	Hospital and clinic hallways, reception, and administrative areas and patient rooms or wards; dentist and doctor offices; pharmacies and drug stores; laboratories; pathologist's diagnostic and office areas; and prison medical wards.

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